For More Information

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Minimal Control Measure 6 Pollution Prevention and Good Housekeeping Practices for Municipal Facilities

6.1 BASIS FOR THE STANDARD OPERATING PROCEDURES (SOPS)

On August 1, 2013, the Minnesota Pollution Control Agency issued a National Pollutant Discharge Elimination System (NPDES) General Permit (GP) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). The MS4 GP requires the City of White Bear Lake to alter their own actions as well as work with other governmental agencies to help ensure a reduction in the amount and type of pollution that:

- Collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways.
- Results from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm sewer systems.

6.2 OBJECTIVES OF THE SOP

This manual is intended to provide guidance on Good Housekeeping Practices for Municipal Operations as follows:

- Provide BMPs used for municipal activities.
- Provide methods for employing spill prevention response.
- Provide tools for documenting inspections of ponds, outfalls, and municipal facilities.

6.3 OPERATIONS

Work Schedule

Inspection and maintenance is performed in conjunction with and can be impacted by other maintenance operations. Inspection and maintenance will typically be conducted during a regular eight (8) hour workday. Extended workdays and shift changes may be necessary for spring runoff events and emergency conditions to provide maximum efficiency. For safety reasons, no operator will work more than a twelve (12) hour shift in any twenty-four (24) hour period.

Training

The City will provide training and information on a regular basis to employees involved in the inspection and maintenance of the City's storm drainage system. At a minimum, training and information will cover:

- Inspection/maintenance procedures
- Reasons for inspection/maintenance
- Erosion and sediment control inspection/maintenance practices
- Good housekeeping practices associated with municipal activities
- Daily, intermediate and long-term preventative inspection/maintenance
- Major/minor repairs
- Vegetation inspection
- Stormwater basins versus wetlands
- Spills or illegal dumping into the storm sewer system
- Public stormwater basins versus private stormwater basins
- Stormwater basins with vegetation requiring additional inspection/maintenance

Complaints

Complaints concerning the storm drainage system will be taken during normal working hours and after normal working hours by those designated as emergency contacts. Problems requiring immediate attention will be handled on a priority basis as determined by the Public Works Director. The City will document all complaints and upgrade this procedure as necessary while giving consideration to the constraints of available resources.

Documentation

The City will document the inspection, maintenance, complaint and emergency responses actions as defined by this document. The inspection and maintenance activities associated with the storm sewer system and stockpile/storage material handing areas will be completed using the forms provided in this document.

6.4 POLLUTION PREVENTION

6.4.1 Dumpsters/Garbage Storage

Activities and Definition

Potential for pollutants can occur if proper garbage management is not in place. An appropriate number of dumpsters should be located throughout the facility to provide enough storage for daily activities. In addition facility dumpsters are to be marked for proper materials disposal.

Preparation

a. Train employees on proper trash disposal.
b. Locate dumpsters and trash cans in convenient, easily observable areas.
c. Provide properly labeled recycling bins to reduce the amount of garbage disposed.
d. Where applicable, install berms, curbing, or vegetation strips around storage areas to control water entering/leaving storage areas.
e. Whenever possible, store garbage containers beneath a covered structure or inside to prevent contact with stormwater.

Process

a. Inspect garbage bins for leaks regularly and have repairs made immediately by responsible party.
b. Request/use dumpsters and trash cans with lids and without drain holes.
c. Locate dumpsters on a flat, hard surface that does not slope or drain directly into the storm drain system.

Clean-up/Follow-up

a. Keep areas around dumpsters clean of all garbage.
b. Have garbage bins emptied regularly to keep from overfilling.
c. Wash out bins or dumpsters as needed to keep odors from becoming a problem.

Documentation

Document training of employees.

6.4.2 Parking Lot Maintenance

Activities and Definition

Parking lots can potentially generate increased pollutant loads to the stormwater system from run-off. A well maintained parking surface can help to reduce some of those pollutant concerns.

Preparation

a. Conduct regular employee training to reinforce proper housekeeping.
b. Restrict parking in areas to be swept prior to and during sweeping using regulations as necessary.
c. Perform regular maintenance and services in accordance with the recommended vehicle maintenance schedule on sweepers to increase and maintain efficiency.

Process

a. Sweep parking areas, as needed, or as directed by the City's responsible official.
b. Hand sweep sections of gutter if soil and debris accumulate.
c. Pick-up litter as required to keep parking areas clean and orderly.

Clean-up/Follow-up

a. Dispose of sweepings properly (appropriate facility).
b. Street sweepers to be cleaned out in a manner as instructed by the manufacturer and in a location that swept materials cannot be introduced into a storm drain.
c. Swept materials will not be stored in locations where stormwater could transport fines into the storm drain system.

Documentation

a. Keep accurate maps and logs to track swept parking areas and approximate quantities.
b. Document training of employees.

6.4.3 Stockpile and Storage Material Handling Areas

Activities and Definition

The City of White Bear Lake completed their facility inventory March, 2015. During the inventory the City evaluated public works facilities, police stations, parks, open space, and their water treatment facility. It was determined that only two facilities have areas with pollutants concerns that will need to be inspected on a quarterly basis. During the inspections the City will evaluate fueling procedures, stockpiles, hazardous wastes storage, landscape areas, and vehicle/equipment washing.

Preparation

a. Conduct regular employee training to reinforce proper housekeeping.
b. Install proper BMPs as indicated on the facility BMP map.
c. Perform regular maintenance of BMPs installed.

Process

a. Quarterly inspect all areas as shown the BMP facility map and as per the facility inspection form.
b. Perform maintenance as directed on the facility inspection form.

Clean-up/Follow-up

a. Install/replace failing BMPs.
b. Purchase new BMPs to ensure adequate quantities are available for maintenance.
c. Equipment not to be cleaned out unless appropriate inlet project device is put in place.
d. Fueling areas are to be inspected for leaks and all spill kits re-stocked.

Documentation

a. Keep inspection and maintenance logs.
b. Logs to be updated quarterly.

6.5 PARKS

6.5.1 Chemical Application Pesticides, Herbicides, Fertilizers

Activities and Definition

A pivotal part of the beautification of the city is a great parks system. The health and beauty of lawns and natural areas take the application of some chemicals and fertilizers.

Preparation

a. Make sure your state Chemical Handling Certification is complete and up-to-date before handling any chemicals. All City of White Bear Lake staff who handle chemicals have the appropriate Applicator's Certification.
b. Calibrate fertilizer and pesticide application equipment to avoid excessive application.
c. Use pesticides only if there is an actual pest problem and periodically test soils for determining proper fertilizer use.
d. Time and apply the application of fertilizers, herbicides or pesticides to coincide with the manufacturer's recommendations for best results ("Read the Label").
e. Know the weather conditions. Do not use pesticides if rain is expected. Apply pesticides only when wind speeds are low (less than 5 mph).

Process

a. Always follow the manufacturer's recommendations for mixing, application and disposal ("Read the Label").
b. Do not mix or prepare pesticides for application near storm drains and never on impervious surfaces. Employ techniques to minimize off-target application (e.g. spray drift, over broadcasting) of pesticides and fertilizers.

Clean-up/Follow-up

a. Sweep pavements or sidewalks where fertilizers or other solid chemicals have fallen, back onto grassy areas before applying irrigation water.
b. Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
c. Always follow all federal and state regulations governing use, storage and disposal of fertilizers, herbicides or pesticides and their containers ("Read the Label").

Documentation

a. Keep copies of MSD sheets for all pesticides, fertilizers and other hazardous products used.
b. Record fertilizing and pesticide application activities, including date, individual who did the application, amount of product used and approximate area covered.

6.5.2 Cleaning Equipment

Activities and Definition

There are many benefits to taking proper care of the City's equipment. Prolonging the life of the equipment by taking the time to maintain critical parts is an essential part of the Parks Department's daily activities.

Preparation

Review process with all Parks employees.

Process

a. Ensure appropriate inlet protection is installed within adjacent storm sewer structures that may receive discharge from equipment washing areas.
b. Wipe off dirt, dust and fluids with disposable towel or air compressor.
c. If detergents are used wash equipment in approved wash station.

Clean-up/Follow-up

a. Dispose of towels in proper trash receptacle
b. Sweep floor and dispose of debris.

Documentation

N/A

6.5.3 Mowing and Trimming

Activities and Definition

Regular mowing and trimming activities have potential to deposit materials onto hard surfaces. Care should be taken to insure mowing or trimming refuse is disposed of properly.

Preparation

a. Process overview with employees.
b. Check the oil and fuel levels of the mowers and other equipment. Fill in proper areas if needed.

Process

a. Put on eye and hearing protection, as required.
b. Mow and trim the lawn.
c. Sweep or blow clippings to grass areas, then clear with deck of mower.

Clean-up/Follow-up

a. Mowers are cleaned daily. Refer to equipment cleaning procedures.
b. Dry spoils are dry swept and disposed of properly
c. Wash equipment in approved wash station.

Documentation

Document and observed deficiencies for correction or repair.

6.5.4 Open Space Management

Activities and Definition

Open space provides great value to the park system that go beyond ball fields. This includes stormwater retention and potential flood relief.

Preparation

a. Provide a regular observation and maintenance of parks, golf courses, and other pubic open spaces.
b. Identify public open spaces that are used for stormwater detention and verify that detention areas are included on the storm drain system mapping, inspection schedules, and maintenance schedules.

Process

a. Ensure that any storm drain or drainage system components on the property are properly maintained.
b. Avoid placing bark mulch (or other floatable landscaping materials) in stormwater detention areas or other areas where stormwater runoff can carry the mulch into the storm drainage system.
c. Follow all SOPs related to irrigation, mowing, landscaping, and pet waste management.

Clean-up/Follow-up

a. Keep all outdoor work areas neat and tidy. Clean by sweeping instead of washing whenever possible. If areas must be washed, ensure that wash water will enter a landscaped area rather than the storm drain. Do not use soap for outdoor washing.
b. Pick up trash on a regular basis.

Documentation

Document and observed deficiencies for correction or repair.

6.5.5 Pet Waste

Activities and Definition

Pet waste has the potential to be a contributor to downstream degradation if not maintained and properly disposed of.

Preparation

a. Enforce ordinance that requires pet owners to clean up pet wastes and use leashes in public areas. If public off-leash areas are designated, verify they are clearly defined.
b. Whenever practical and cost effective, install dispensers for pet waste bags and provide disposal containers at locations such as trail heads or parks where pet waste has been a problem. Provide signs with instructions for proper cleanup and disposal.

Process

a. Check parks and trails for pet waste as needed.
b. Check public open space for pet waste while mowing and watering.
c. Provide ordinance enforcement as needed. Look for opportunities for increased education.

Clean up/Follow-up

Remove all pet waste; provide temporary storage in a covered waste container, and dispose of properly. Preferred method of disposal is at a solid waste disposal facility.

Documentation

Document problem areas for possible increased enforcement and/or public education signs.

6.5.6 Planting Vegetation (Starters)

Activities and Definition

Vegetation is a key component of establishing healthy ecosystems that hold water and nutrients on site.

Preparation

a. Call the appropriate numbers for location of utilities.
b. Decide where any spoils will be taken.

Process

a. Dig holes; place spoils near the hole where they may easily be placed back around the roots. Avoid placing spoils into the gutter system.
b. Bring each plant near the edge of the hole dug for it.
c. Check the depth of the hole, and adjust the depth if necessary. The depth of the hole for a tree should be as deep as the root ball, so that the top of the root ball is level with the top of the hole.
d. Carefully remove pot or burlap.
e. Place the plant in the hole.
f. Backfill the hole with existing spoils, compost, and fertilizer if desired. Do not use excessive amendments.
g. Water the plant.
h. Stake the plant if necessary to stabilize it.

Clean-up/Follow-up

a. Remove any extra spoils into truck or trailer. Place the spoils on a tarp if there is likelihood that some of the dirt would be lost through openings in the bed.
b. Sweep dirt from surrounding pavement(s) into the planter area.
c. Transport spoils to their designated fill or disposal area.

Documentation

N/A

6.5.7 Planting Vegetation (Seeds)

Activities and Definition

Vegetation is a key component of establishing healthy ecosystems that hold water and nutrients on site.

Preparation

a. Call the appropriate numbers for location of utilities.
b. Decide where any spoils will be taken.
c. Decide on the application rate, method, water source, and ensure adequate materials are on hand.
d. Grade and prepare soil to receive the seed. Place any extra soil in a convenient location to collect.

Process

a. Place the seed and any cover suing the pre-determined application method (and rate).
b. Lightly moisten the seed.

Clean-up/Follow-up

a. Remove any extra spoils into truck or trailer. Place the spoils on a tarp if there is likelihood that some of the dirt would be lost through openings in the bed.
b. Sweep dirt from surrounding pavement(s) into the planter area.
c. Transport spoils to their designated fill or disposal area.

Documentation

N/A

6.5.8 Transporting Equipment

Activities and Definition

Equipment Transportation is a pivotal part of the daily activities that occurs on a daily basis.

Preparation

a. Determine equipment needed for transport and method (trailer, truck bed) needed to transport equipment, if required.
b. Conduct pre-trip inspection of equipment.

Process

a. Load and secure equipment on trailer or truck.
b. Load and secure fuel containers for equipment usage.

Clean-up/Follow-up

a. Off load equipment.
b. Store equipment and trailer in proper location.
c. Conduct post-trip inspection of equipment, if required.
d. Wash equipment if needed, according to the written procedure for cleaning equipment.

Documentation

Pre-trip and post-trip inspection report, if required.

6.6 SANITARY SEWER – OVERFLOWS

Activities and Definition

Sanitary sewer system even with high-performing operation and maintenance programs will experience overflows and backups from time to time. A proper response plan will help mitigate the effects of a backup and it will be necessary to contact the Minnesota State Duty Officer.

Preparation

a. Train staff to make them aware of the need to report the spill and spill response/clean-up procedures (Appendix C).
b. Have all equipment ready to assist with spill clean-up or containment (e.g., confined space entry equipment, safety gear, jet flushing unit/vacuum truck, pumps, disinfectants, televising equipment, etc.)
c. Have sewer maps available.

Process

a. Report sanitary sewer spill to Minnesota State Duty Officer at (651)-422-0798 or 1-800-422-0798.
b. Typical information requested by the Minnesota State Duty Officer includes:
    1. Name of caller
    2. Date, time, and location of incident
    3. Telephone number for call-backs at the scene or facility
    4. Whether local officials have been notified
    5. Materials and quantity involved in the incident
    6. Incident location
    7. Responsible party
    8. Any surface waters or sewers impacted
    9. Present situation of the spill (on-going or contained)
c. Inform the public if they are at risk (e.g., spill nears swimming beached, public drinking water intakes, and recreational areas. Notification mechanisms may include:
    1. Hand delivery of door hangers
    2. Temporary posting at impacted areas
    3. Notifications in newspaper, radio announcements, messages on local access cable channel, messages on website, and social media.

6.7 STREETS

6.7.1 Overlays and Patching

Activities and Definition

Pollutants collect on surfaces in between storm events as a result of atmospheric deposition, vehicle emissions, winter road maintenance, construction site debris, trash, road wear and tear. Overlays and patching are a part of the maintenance of these surfaces that help prolong the life of the roadway.

Preparation

a. Measure and mark locations of manholes and valves on the curb.
b. Cracks should be properly sealed. Alligator cracks and potholes should be removed and patched. Rutting should be milled.
c. Surface should be clean and dry.
d. Uniform tack coat applied and cured prior to placement of overlay.
e. If milling is required, install inlet protection as needed.

Process

a. Check hot asphalt mix for proper temperature, percentage asphalt, gradation, air voids, and any other agency requirements.
b. Raise manhole lids and valves to elevation of new asphalt surface with riser rings.
c. Surface texture should be uniform, no tearing or scuffing.
d. Rolling should be done to achieve proper in-place air void specification.

Clean up/Follow-up

a. Covering should be removed as soon as the threat of imported materials entering the system is reduced and prior to a storm event.
b. After pavement has cooled, sweep gutters to remove loose aggregate.

Documentation

NA

6.7.2 Crack Seal

Activities and Definition

Pollutants collect on surfaces in between storm events as a result of atmospheric deposition, vehicle emissions, winter road maintenance, construction site debris, trash, road wear and tear. Crack sealing is a part of the maintenance of these surfaces that help prolong the life of the roadway.

Preparation

a. Remove weeds from the road.
b. Air-blast the cracks to remove sediments from the crack to allow for proper adhesion.
c. Ensure that surface is clean and dry.
d. Sweep within 24 hours

Process

a. Proper temperature of material should be maintained.
b. Sufficient material is applied to form the specified configuration.

Clean-up/Follow-up

a. Excessive sealant application or spills are removed.
b. Sweep all loose debris from the pavement and dispose of it in the local landfill.

Documentation

Record location and date on the maintenance database and map.

6.7.4 Shouldering and Mowing

Activities and Definition

Pollutants collect on surfaces in between storm events as a result of atmospheric deposition, vehicle emissions, winter road maintenance, construction site debris, trash, road wear and tear, and litter from adjacent lawn maintenance (grass clippings). The shoulders of the road should be properly maintained to insure infiltration and other techniques for stormwater run-off are working with the most efficiency.

Preparation

Set up temporary traffic control devices

Process

a. Place import material as needed and perform grading to achieve proper drainage.
b. Mulch clippings to help reduce the amount of supplemental fertilizer required.

Clean up/Follow-up

Clean any loose material off asphalt or gutter.

Documentation

Record location and date on the maintenance database and map.

6.7.5 Secondary Road Maintenance

Activities and Definition

Plans that are submitted to the City for approval will have a review process to guarantee that erosion and sediment control standards are being met.

Preparation

a. Determine length amount and type of road base or gravel that will be needed.
b. Determine proper equipment to be used and or any safety hazards.
c. Design proper drainage: slopes, berms, etc.

Process

a. Have truck drivers follow a designated route for hauling in the soil (See SOP for transporting soil and gravel).
b. If soils are too dry to achieve compaction, loosen surface material and moisture condition.
c. Smooth or grade soil with the desired crown or cross-slope.
d. Compact soil.

Clean up/Follow-up

a. Replace filter fabric with washed rock (if necessary) on monthly maintenance.
b. Wash equipment if needed, according to the written procedure for cleaning equipment.
c. Clean up any debris on traveled roads, and dispose of it in the landfill.

Documentation

Fill out daily activity report in log book or journal. Include date, time, personnel, and location.

6.7.6 Concrete Work

Activities and Definition

The use of concrete is a common practice for BMP maintenance, proper management of those materials is critical for pollution prevention.

Preparation

a. Train employees and contractors in proper concrete waste management.
b. Store dry and wet materials under cover, away from drainage areas.
c. Remove any damaged concrete that may need to be replaced.
d. Prepare and compact sub-base.
e. Set forms and place any reinforcing steel that may be required.
f. Determine how much new concrete will be needed.
g. Locate or construct approved concrete washout facility.

Process

a. Install inlet protection as needed.
b. Avoid mixing excess amounts of fresh concrete on-site.
c. Moisten sub-base just prior to placing new concrete. This helps keep the soil from wicking moisture out of the concrete into the ground.
d. Place new concrete in forms.
e. Consolidate new concrete.
f. Screed off surface.
g. Let concrete obtain its initial set.
h. Apply appropriate surface finish.
i. Remove forms when concrete will not slump.

Clean-up/Follow-up

a. Perform washout of concrete trucks and equipment in designated areas only.
b. Do not washout concrete trucks or equipment into storm drains, open ditches, streets or streams.
c. Cement and concrete dust from grinding activities is swept up and removed from the site.
d. Remove dirt or debris from street and gutter.

Documentation

N/A

6.7.7 Garbage Storage

Activities and Definition

Illegal dumping of non-hazardous household waste and improper dumping of yard waste in streets, storm drains, wetlands, lakes, and other water bodies pollutes surface waters. Non-hazardous household waste includes items such as tires, furniture, common household appliances and other bulk items. Yard waste includes any organic debris such as grass clippings, leaves, and tree branches.

Preparation

a. Locate dumpsters and trash cans with lids in convenient, easily observable areas.
b. Provide properly labeled recycling bins to reduce the amount of garbage disposed.
c. Provide training to employees to prevent improper disposal of general trash.

Process

a. Inspect garbage bins for leaks regularly, and have repairs made immediately by responsible party.
b. Locate dumpsters on a flat, impervious surface that does not slope or drain directly into the storm drain system.
c. Install berms, curbing or vegetation strips around storage areas to control water entering/leaving storage areas.
d. Keep lids closed when not actively filling dumpster.

Clean-up/Follow-up

a. Keep areas around dumpsters clean of all garbage.
b. Have garbage bins emptied as often as needed to keep from overfilling.
c. Wash out bins or dumpsters as needed to keep odors from becoming a problem. Wash out in properly designated areas only.

Documentation

N/A

6.7.8 Snow Removal and De-icing

Activities and Definition

The concentration of chloride is increasing in our surface and ground water largely due to stormwater runoff from road salt storage piles, areas of excessive application, or simply from years of repeated application since chloride does not degrade in soil and water. Chloride in road salt and road salt additives (e.g. ferrocyanide for anti-caking) can create toxic conditions for fish, insects and vegetation.

Preparation

a. Store de-icing material under a covered storage area or in an area where water coming off the de-icing materials is collected and delivered to the sanitary sewer or reused as salt brine.
b. Slope loading area away from storm drain inlets.
c. Design drainage from loading area to collect runoff before entering stormwater system.
d. Washout vehicles (if necessary) in approved washout area before preparing them for snow removal.
e. Calibrate spreaders to minimize amount of de-icing material used and still be effective.
f. Provide vehicles with spill cleanup kits in case of hydraulic line rupture or other spill.
g. Train employees in spill cleanup procedures and proper handling and storage of de-icing materials.

Process

a. Load material into trucks carefully to minimize spillage.
b. Periodically dry sweep loading area to reduce the amount of de-icing materials exposed to runoff.
c. Distribute the minimum amount of de-icing material to be effective on the roads.
d. Do not allow spreaders to idle while distributing de-icing materials.
e. Park trucks loaded with de-icing materials inside when possible.

Clean-up/Follow-up

a. Sweep up all spilled de-icing material around loading area.
b. Clean out trucks after snow removal duty in approved washout area.
c. Provide maintenance for vehicles in covered areas.
d. If sand is used in de-icing operations, sweep up residual sand form streets when weather permits.

Documentation

Fill out daily activity report in log book or journal. Include date, time, personnel, and location, as appropriate.

6.7.9 Street Sweeping

Activities and Definition

Pollutants collect on surfaces in between storm events as a result of atmospheric deposition, vehicle emissions, winter road maintenance, construction site debris, trash, road wear and tear, and litter from adjacent lawn maintenance (grass clippings). Sweeping of materials such as sand, salt, leaves and debris from city streets, parking lots and sidewalks prevents them from being washed into storm sewers and surface waters. Timing, frequency and critical area targeting greatly influence the effectiveness of sweeping.

Preparation

a. Prioritize cleaning routes based on areas with highest priority.
b. Restrict street parking prior to and during sweeping using regulations as necessary.
c. Increase sweeping frequency just before the rainy season, unless sweeping occurs continuously throughout the year.
d. Perform preventative maintenance and services on sweepers to increase and maintain their efficiency.

Process

a. Streets are to be swept as needed or specified by the city; street maps are used to ensure all streets are swept at a specific interval.
b. Drive street sweeper safely and pick up debris.
c. When full take the sweeper to an approved street sweeper cleaning station.

Clean-up/Follow-up

a. Street sweepers are to be cleaned out in an approved street sweeper cleaning station.
b. Street sweeping cleaning stations shall separate the solids from the liquids.
c. Once solids have dried out, haul them to the local landfill.
d. Decant water is to be collected and routed to an approved wastewater collection system area only.
e. Haul all dumped material to the landfill.

Documentation

Highlight the City street map to show progress being made as the City sweeps its streets in the spring and fall.

6.7.10 Transporting Soil and Gravel

Activities and Definition

Transportation of materials should be handled with pre-planning and contingency planning.

Preparation

a. Dry out wet materials before transporting.
b. Spray down dusty materials to keep from blowing.
c. Make sure you know and understand the SWPPP requirements for the site you will be working at.
d. Determine the location that the truck and other equipment will be cleaned afterwards.

Process

a. Use a stabilized construction entrance to access or leave the site where materials are being transported to/from.
b. Cover truck bed with a secured tarp before transporting.
c. Follow the SWPPP requirements for the specific site to /from which the materials are being hauled.
d. Make sure not to overfill materials when loading trucks.

Clean-up/Follow-up

a. Use sweeper to clean up any materials tracked out on the roads from site.
b. Washout truck and other equipment when needed in properly designated area.

Documentation

Keep records of any material that is tracked out of site and what was done to clean it up and how long it took to clean up and what the weather conditions were at the time.

6.8 STORM DRAINAGE SYSTEM

6.8.1 Catch Basins

Activities and Definition

Catch basin cleaning needs to be completed on a regular basis to insure the functionality of the storm sewer system.

Preparation

a. Clean sediment and trash off of grate.
b. Do visual inspection on outside of grate.
c. Make sure nothing needs to be replaced.
d. Do inside visual inspection to see what needs to be cleaned.

Process

a. Clean using a high powered vacuum truck to start sucking out standing water and sediment.
b. Use a high pressure washer to clean any remaining material out of catch basin, while capturing the slurry with the vacuum.
c. After catch basin is clean, send the rodder of the vacuum truck downstream to clean pipe and pull back sediment that might have gotten downstream of pipe.
d. Move truck downstream of pipe to next catch basin.

Clean-up/Follow-up

a. When vacuum truck is full of sediment, take it to the designated location to dump all the sediment out of truck into a drying bed.
b. When it evaporates, clean it up with a backhoe/skid loader, put it into dump truck and take to permanent disposal site (landfill).

Documentation

a. Keep logs of number of catch basins cleaned.
b. Keep any notes or comments of any problems.
c. Document the landfill location of where material is disposed.

6.8.2 Outfall Inspections/Maintenance

Activities and Definition

Prior to the expiration date of the City's MS4 permit, the City shall conduct at least one inspection of all outfalls (excluding underground outfalls) in order to determine structural integrity, proper function, and maintenance needs.

Preparation

a. Collect dry weather inspection information whenever possible.
b. Mark the outfall with its identifier for future location and easy reference using pre-manufactured signs.
c. Ensure that all the appropriate forms are available during the time of the inspection.

Process

a. For each outfall inspection, complete the inspection form provided in the City's SWPPP program binder.
b. If applicable, take appropriate pictures and attach them with the inspection form.
c. The Outfall Inspection Fact Sheet (Appendix B) can be used to assist in the inspection process.

Clean-up/Follow-up

Follow the procedure of Routine Pond Maintenance for any required maintenance.

Documentation

a. Keep logs of number of outfalls inspected each year.
b. Document any maintenance performed.
c. Save all documents within the City's network designated SWPPP folder using the same folder structure as provided with the electronic SWPPP provided.

6.8.3 Structural Stormwater Best Management Practice Inspections/Maintenance

Activities and Definition

Structural Stormwater Best Management Practices (SSBMPs) will be inspected annually to determine structural integrity, proper function and maintenance needs. SSBMPs include BMPs put in place that are designed to remove pollutants (i.e., environmental manholes, raingardens, filtration features, etc.).

Preparation

a. Clean sediment and trash off of grate.
b. Do visual inspection on outside of grate.
c. Make sure nothing needs to be replaced.
d. Do inside visual inspection to see what needs to be cleaned.

Process

a. Clean using a high powered vacuum truck to start sucking out standing water and sediment.
b. Use a high pressure washer to clean any remaining material out of catch basin, while capturing the slurry with the vacuum.
c. After catch basin is clean, send the rodder of the vacuum truck downstream to clean pipe and pull back sediment that might have gotten downstream of pipe.
d. Move truck downstream of pipe to next catch basin.

Clean-up/Follow-up

a. When vacuum truck is full of sediment, take it to the designated location to dump all the sediment out of truck into a drying bed.
b. When it evaporates, clean it up with a backhoe/skid loader, put it into dump truck and take to permanent disposal site (landfill).

Documentation

a. Keep logs of number of catch basins cleaned.
b. Record the amount of waste collected.
c. Keep any notes or comments of any problems.
d. Document the landfill location of where material is disposed.

6.8.4 Pond Inspections

Activities and Definitions

Prior to the expiration date of the City's MS4 permit, the City shall conduct at least one inspection of all City owned stormwater ponds in order to determine structural integrity, proper function, and maintenance needs. The City shall also inspect any privately owned ponds that are under the City's maintenance requirements as deemed appropriate a signed maintenance agreement.

Preparation

a. Collect dry weather inspection information whenever possible.
b. Ensure that all the appropriate forms are available during the time of the inspection.

Process

a. For each pond inspection, complete the inspection form provided in the City's SWPPP program binder.
b. If applicable, take appropriate pictures and attach them with the inspection form.

Clean-up/Follow-up

Follow the procedure of Routine Pond Maintenance for any required maintenance.

Documentation

a. Keep logs of number of outfalls inspected each year.
b. Document any maintenance performed.
c. Save all documents within the City's network designated SWPPP folder using the same folder structure as provided with the electronic SWPPP provided.

6.8.5 Routine Pond Maintenance

Activities and Definition

Stormwater ponds remove pollutants transported by rain events through settling and biological uptake. To function properly, stormwater ponds need to have volume to hold water and wetland plants along the pond edges and shallow areas. Performing maintenance to stormwater ponds is critical for the long-term operation of the MS4 system. Routine maintenance is considered a maintenance project that will remove less than 100 cubic yard of material.

Preparation

a. Schedule the pond maintenance work for a time when dry weather is expected.
b. Do a visual inspection to make sure any grates, structures, manholes, and pipes are in good working order. Remove manhole covers and grates as necessary for inspecting.

Process

a. Provide outlet protection where feasible to minimize the amount of debris that might leave basin during cleaning process.
b. Perform routine maintenance, which may include:
    1. Removal of trash and other accumulated debris from trash grate.
    2. Removal of vegetation around and/or in front of the outlet structure.
    3. Repair of side slopes to mitigate erosion issues.
    4. Replacement of riprap in front of the outlet to prevent future scour and erosion.
c. Continue cleaning structures and surrounding area as necessary by sweeping and shoveling.
d. Put all material removed from the pond into a dump truck.
e. Some structures might require use of a vacuum truck. If so, use the same procedures described for cleaning catch basins.

Clean-up/Follow-up

a. After performing maintenance, clean off the concrete pads using dry methods (sweeping and shoveling).
b. Properly dispose of the material that was removed.
c. Site restoration work, if applicable, shall be conducted as soon as weather conditions permit and may include:
    1. Additional clean-up or maintenance of inlet and outlet structures.
    2. Additional site stabilization work including sediment and erosion control.
    3. Establishing plant, seed, sod, mulch or vegetation to prevent erosion (above waterline).
    4. Professional engineer to sign-off on project completion.

Documentation

a. Keep logs of each detention basins/pond cleaned including date, individuals involved in cleaning, and a description of the type of debris removed.
b. Record the amount of waste collected.
c. Keep any notes or comments of any other observations about the maintenance that will help the City operate and maintain that site in the future.

6.8.6 Pond Assessment Process

Activities and Definition

The following pond assessment procedures and schedule shall be followed to determine the Total Suspended Solids (TSS) and Total Phosphorous (TP) treatment effectiveness of City owned and operated ponds that are constructed for the collection and treatment of stormwater.

Assessment Procedure

At the initiation of a pond assessment, the City shall evaluate the City-owned and operated stormwater treatment ponds in year 1 to determine the highest priority pond(s) for assessing TSS and TP effectiveness. This will be completed at the initiation of each assessment rather than prioritizing all of the ponds upfront because priorities and unknown factors may change from year-to-year.

In order to create a pond assessment schedule for the City-owned and operated stormwater treatment ponds to determine the highest priority pond(s) for assessing TSS and TP effectiveness, in year 1 the City should prioritize ponds to assess based on the following criteria:

- Age of pond.
- Contributing drainage area characteristics (size, land use, upland treatment, etc.).
- Known concerns based on inspections.
- Type and location of receiving water.
- Sensitivity of receiving water.
- Complaints received from the public.

The ponds that have been identified as having the highest priority shall be added to a schedule to be more thoroughly assessed in year 1. The remaining ponds will be reassessed in year 2 using the same criteria. Similar to year 1, the ponds that have been identified as having the highest priority shall be added to a schedule to be more thoroughly assessed in year 2.

Additional Survey of Pond

From the initial assessment of each pond completed in year 1, the City will perform a more thorough analysis of the ponds that are found to be half full of sediment, as well as the ponds that are continually showing signs of needing maintenance, in the following years. The following steps shall be taken to assess the City pond(s) for TSS and TP treatment effectiveness:

a. Gathering of background information. This may include the following:
    - Original design information, if available (record drawings, design calculations, etc.).
    - Determination of contributing drainage area.
    - As-built survey information, if completed and available.
    - Other significant information available that pertains to the pond.

b. Site investigation and/or survey of existing pond conditions. This may include the following:
    - Determination of sediment levels in the pond.
    - Identification of outlet details (elevations, type and condition of structure(s), etc.).
    - Identification of inlet details (number, type, elevations, etc.).
    - Other significant pond characteristics and details.

c. Desktop evaluation of existing TSS and TP treatment effectiveness by completing water quality calculations using the survey data obtained, P8, Pondnet, or other suitable modeling methods.

Clean-up/Follow-up

a. Once the assessment of each pond is complete, a pond maintenance and dredging schedule can be implemented.
b. The City will either complete the dredging in-house, or contract it out depending on the availability of City staff.
c. The dredged materials must be tested, and a disposal plan will be developed, based on the test results.
d. Sediment removal guidance for the testing and removal of sediment can be found in Appendix A.

Documentation

a. Create a record of the schedule determined for basin/pond cleaning.
b. Keep logs of each detention basins/pond cleaned including date, individuals involved in cleaning, and a description of the type of debris removed.
c. Record the amount of waste collected and the results of the sediment testing (if applicable).
d. Keep any notes or comments of any problems.

6.8.7 Detention Pond Cleaning

Activities and Definition

Storm drains are gateways that allow pollutants in stormwater to flow untreated from local streets to lakes, rivers and streams. Residual oil, grease, solids, antifreeze, cigarette butts, yard waste, plastic and other wastes found on roads, parking lots and driveways pollute downstream waters by increasing phosphorus levels, reducing oxygen levels and ultimately impairing aquatic habitat for fish and other organisms as well as drinking water sources. Removing sediment and debris on a regular basis will help the system in getting the most TP and TSS removal.

Preparation

a. The MPCA requires the City to sample sediment prior to dredging to determine concentrations of 17 cPAHS, non-carcinogenic PAHs, arsenic, and copper.
    1. If the annual volume of sediment to be removed is less than 100 cubic yards, then no chemical testing or sediment characterization is required; however, the City is responsible for the due diligence in the reuse and/or disposal of this material.
    2. When more than 100 cubic yards of sediment need to be removed, the City will need to complete further analysis of the pond sediment. The sediment will need to be tested and disposed of in accordance with the guidance found in the MPCA's Sediment Removal Guidance (Appendix A).
    3. Testing of the ponds can be done so that areas of the pond can be segregated (e.g., if areas of the pond such as the inlets are identified to have the highest concentrations the areas around the inlet could be disposed of differently as compared to the remainder of the pond, if the areas can be segregated sufficiently).
b. If chemical testing or sediment characterization is required, the sediment samples shall be sent to an analytical laboratory for review.
c. Once the results from the analytical laboratory have been received, a maintenance and disposal plan will be developed based on the test results. The City shall use sediment removal guidance from the MPCA in Appendix A.
d. Discuss maintenance needs with the Public Works Director to discuss the next course of action prior to scheduling any maintenance activities.
e. Schedule the Pond cleaning work for a time when dry weather is expected. Factors that may delay these activities may include temperatures below thirty-two (32) degrees Fahrenheit, wind, rain, snow and frozen storm drainage systems. Inspection and maintenance will typically be conducted during a regular eight (8) hour workday. Extended workdays and shift changes may be necessary for spring runoff events and emergency conditions to provide maximum efficiency. For safety reasons, no operator will work more than a twelve (12) hour shift in any twenty-four (24) hour period.
f. Unexpected ponding water can create a dangerous condition for vehicles, motorcyclists, bicyclists, pedestrians and property. It is not practical to sign all areas for potentially dangerous conditions. During such events, warning signs indicating a hazard may be placed in the vicinity and other areas

as deemed necessary by the Public Works Director. These signs will remain in place until the situation has subsided.

g. Remove any sediment and trash from grates, placing it in a truck for disposal.
h. Do a visual inspection to make sure any grates, structures, manholes, and pipes are in good working order. Remove manhole covers and grates as necessary for inspecting.

Process

a. Provide outlet protection where feasible to minimize the amount of debris that might leave basin during cleaning process.
b. Start cleaning basin by using backhoe to remove debris and sediment off the bottom.
c. Continue cleaning structures and pond bottom as necessary by sweeping and shoveling.
d. Put all material removed from the pond into a dump truck.
e. Some structures might require use of a vacuum truck. If so use the same procedures described for cleaning catch basins.

Clean-up/Follow-up

a. After cleaning basins, clean off the concrete pads using dry methods (sweeping and shoveling).
b. Make sure they are swept up and clean.
c. Take the material that was removed to the landfill for final disposal.

Documentation

a. Keep logs of each detention basins/pond cleaned including date, individuals involved in cleaning, and a description of the type of debris removed.
b. Record the amount of waste collected.
c. Keep any notes or comments of any problems.

6.8.8 Ditch Management

Activities and Definition

Storm drains are gateways that allow pollutants in stormwater to flow untreated from local streets to lakes, rivers and streams. Residual oil, grease, solids, antifreeze, cigarette butts, yard waste, plastic and other wastes found on roads, parking lots and driveways pollute downstream waters by increasing phosphorus levels, reducing oxygen levels and ultimately impairing aquatic habitat for fish and other organisms as well as drinking water sources.

Preparation

a. Monitor ditches as appropriate.
b. Maintain access to ditch channels wherever possible.
c. Contact affected property owners and utility owners.

Process

a. Identify areas requiring maintenance.
b. Determine what manpower or equipment will be required.
c. Identify access and easements to area requiring maintenance.
d. Determine method of maintenance that will be least damaging to the channel and adjacent properties or utilities.

Clean-up/Follow-up

a. Stabilize all disturbed soils.
b. Remove all tracking from paved surfaces near maintenance site, if applicable.
c. Haul all debris or sediment removed from area to approved dumping site.

Documentation

a. Keep log of actions performed including date and individuals involved.
b. Keep any notes or comments of any problems.

6.9 VEHICLES

6.9.1 Fueling

Activities and Definition

Fueling of equipment and vehicles should always occur in designated areas when possible. Spill prevention and planning should occur before any fueling takes place.

Preparation

a. Train employees on proper fueling methods and spill cleanup techniques.
b. Install a canopy or roof over aboveground storage tanks and fuel transfer areas.
c. Absorbent spill clean-up materials and spill kits shall be available in fueling areas and on mobile fueling vehicles and shall be disposed of properly after use.

Process

a. Shut off the engine
b. Ensure that the fuel is the proper type of fuel for the vehicle.
c. Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut off to prevent overfill.
d. Fuel vehicle carefully to minimize drips to the ground.
e. Fuel tanks shall not be topped off.
f. Mobile fueling shall be minimized. Whenever practical vehicles and equipment shall be transported to the designated fueling area in the Facilities area.
g. When fueling small equipment from portable containers, fuel in an area away from storm drains and water bodies.

Clean-up/Follow-up

a. Immediately clean up spills using dry absorbent (e.g. kitty litter, sawdust, etc.) sweep up absorbent material and properly dispose of contaminated clean up materials.
b. Large spills shall be contained as best as possible and the Duty officer and Hazmat team should be notified as soon as possible.

Documentation

a. Comply with underground storage tank records and monitoring requirements.
b. Document training of employees.

6.9.2 Vehicle and Equipment Storage

Activities and Definition

When hazardous material comes into contact with rain or snow, the pollutants are washed into the storm sewer system and, ultimately, to surface water bodies and/or ground water. Hazardous materials have negative impacts on fish habitat, ground water drinking water sources, and recreational uses.

Preparation

a. Inspect parking areas for stains/leaks on a regular basis.
b. Provide drip pans or absorbents for leaking vehicles.

Process

a. Whenever possible, store vehicles inside where floor drains have been connected to sanitary sewer systems.
b. When inside storage is not available, vehicles and equipment will be parked in the approved designated areas.
c. Maintain vehicles to prevent leaks as much as possible.
d. Address any known leaks or drips as soon as possible. When a leak is detected a drip pan will be placed under the leaking vehicle.
e. The shop will provide a labeled location to empty and store drip pans.
f. Clean up all spills using dry methods.
g. Never store leaking vehicles over a storm drain.

Clean-up/Follow-up

a. Any leaks that are spilled on the asphalt will be cleaned up with dry absorbent; the dry absorbent will be swept up and disposed of in the garbage.
b. The paved surfaces around the building will be swept every two weeks, weather permitting.

Documentation

N/A

6.9.3 Washing

Activities and Definition

MS4 vehicle washing involves the removal of dust and dirt from the exterior of trucks, boats and other vehicles, as well as the cleaning of cargo areas and engines and other mechanical parts. Washing of vehicles and equipment generates oil, grease, sediment and metals in the wash water as well as degreasing solvents, cleaning solutions and detergents used in the cleaning operations.

Preparation

a. Provide wash areas for small vehicles inside the maintenance building that has a drain system which is attached to the sanitary sewer system.
b. Provide wash areas for large vehicles on an approved outside wash pad that has a drain system which is attached to the sanitary sewer system.
c. No vehicle washing will be done where the drain system is connected to the storm sewer system.

Process

a. Minimize water and soap use when washing vehicles inside the shop building.
b. Soap should not be used when washing vehicles outside the shop building.
c. Use hoses with automatic shut off nozzles to minimize water usage.
d. When washing outside the building, it is the operator's responsibility to make sure all wash water is contained on the wash pad and does not have access to the storm drain.
e. Never wash vehicles over a storm drain.

Clean-up/Follow-up

a. Sweep wash areas after every washing to collect what solids can be collected to prevent them from washing down the drain system.
b. Clean solids from the settling pits on an as needed basis.

Documentation

N/A

6.10 WATER

6.10.1 Planned Waterline Excavation Repair/Replacement

Activities and Definition

Waterline excavation and repair of an MS4 system can potentially involve activities that could affect the health of the MS4 system. Planning is critical.

Preparation

a. Determine where discharge flow will go.
b. Place inlet protection at nearest downstream storm drain inlets.
c. Clean gutters leading to inlets.
d. Isolate waterline to be worked on.
e. Neutralize any chlorine residual before discharging water. This process is a responsibility of the contractor. Contractor shall use such projects as a chlorine diffuser.

Process

a. Make efforts to keep water from pipeline from entering the excavation.
b. Direct any discharge to pre-determined area.
c. Backfill and compact excavation.
d. Haul of excavated material or stock pile nearby.

Clean-up/Follow-up

a. Clear gutter/waterway where water flowed.
b. Clean up all areas around excavation.
c. Clean up travel path of trucked material.

Documentation

Complete paperwork.

6.10.2 Unplanned Waterline Excavation Repair/Replacement

Activities and Definition

Waterline Excavation and repair of an MS4 system can potentially involve activities that could affect the health of the MS4 system. Unplanned excavations can be additionally tricky and pre-planning is critical.

Preparation

Make sure service trucks have wattles, gravel bags, or other materials for inlet protection.

Process

a. Slow the discharge.
b. Inspect flow path of discharge water.
c. As much as possible, flows should be directed to the municipal sanitary sewer system for treatment.
d. Protect water inlet areas.
e. Follow planned repair procedures.
f. Haul off spoils of excavation.
g. Consider use of silt filter bags on pumps.

Clean-up/Follow-up

a. Repair eroded areas as needed.
b. Follow planned repair procedures.
c. Clean up the travel path of trucked excavated material.

Documentation

Complete paperwork.

6.10.3 Transporting Dry Excavated Materials and Spoils

Activities and Definition

Transportation of materials should be handled with pre-planning and contingency planning.

Preparation

a. Utilize truck with proper containment of materials.
b. Determine disposal site of excavated materials.

Process

a. Load
b. Check truck after loading for possible spillage.
c. Transport in manner to eliminate spillage and tracking.
d. Utilize one route for transporting.

Clean-up/Follow-up

a. Clean loading area.
b. Clean transporting route.
c. Wash off truck and other equipment in a designated equipment cleaning area.

Documentation

Complete paperwork.

6.10.4 Transporting Wet Excavated Materials & Spoils

Activities and Definition

Transportation of materials should be handled with pre-planning and contingency planning.

Preparation

a. Utilize truck with containment for material.
b. Determine disposal site of excavated material.

Process

a. Load and Transport in manner to minimize spillage & tracking of material.
b. Check truck for spillage.
c. Utilize one route of transport.

Clean-up/Follow-up

a. Clean route of transport to provide cleaning of any spilled material.
b. Washout equipment truck and other equipment in designated wash area.

Documentation

Complete paperwork.

6.10.5 Waterline Flushing for Routine Maintenance

Activities and Definition

Flushing is a process that rapidly removes water from the city's water piping system. Flushing uses water force to scour out materials that accumulate in the city's pipes. Water pipes are usually flushed by opening fire hydrants, where the discharged water flows off the streets the same as rainwater.

Preparation

a. Determine flow path of discharge to inlet of waterway.
b. Determine chlorine residual.
c. Neutralize chlorine residual.

Process

a. Clean flow path.
b. Protect inlet structures.
c. Use diffuser to dissipate pressure to reduce erosion possibilities.

Clean-up/Follow-up

a. Clean flow path.
b. Remove inlet protection.

Documentation

NA

6.10.6 Waterline Flushing after Construction/System Disinfection with Discharge to Storm Drain

Activities and Definition

Flushing is a process that rapidly removes water from the city's water piping system. Flushing uses water force to scour out materials that accumulate in the city's pipes. Water pipes are usually flushed by opening fire hydrants, where the discharged water flows off the streets the same as rainwater.

Preparation

a. Determine chlorine content of discharge water, and select de-chlorination equipment to be used.
b. Determine flow path of discharge.

Process

a. Protect inlets in flow path.
b. Install de-chlorination equipment.
c. Sweep and clean flow path.
d. Use a diffuser to reduce velocities.

Clean-up/Follow-up

a. Pick up inlet protection.
b. Clean flow paths.
c. Remove equipment from flush point.

Documentation

a. Residual tests of discharge water.
b. Complete paperwork.

6.10.7 Chemical Handling/Transporting and Spill Release

Activities and Definition

Hotspot facilities are facilities that produce higher levels of stormwater pollutants and/or present a higher potential risk for spills, leaks or illicit discharges. Hazardous material storage and handling is of particular concern in these areas.

Preparation

a. Understand MSDS sheets for handling of product.
b. Determine proper place of handling.
c. Have necessary containment and spill kits at handling place.

Process

a. Begin transfer process.
b. Discontinue operations if a spill level occurs.
c. Disconnect and store handling equipment.

Clean-up/Follow-up

a. Clean up spills with proper material.
b. Dispose of contaminated material at appropriate facility.

Documentation

a. Report spills to duty officer.
b. Complete paperwork.